erate/severe) to the MME, which may be in PLMN B. If the indication is moderate, the MME can allow the ongoing attach procedures that are at completion. New requests destined, for example, for PLMN A, which would thus require interactions with the overloaded HSS, would not be allowed by the HSS; the MME would then selectively reject users from PLMN A, for example, with a back-off timer.

[0030] If the overload indication is for a severe overload, the MME may stop all ongoing Attach procedures, and reject the users belonging to this PLMN with a back-off timer. New requests destined, for example, for PLMN A will not be allowed, and the MME would selectively reject users from PLMN A. The MME should also indicate to other nodes under its control that this particular PLMN is in an overload condition. Other nodes such as eNB shall perform Access Stratum overload procedures for users belonging to this specific PLMN. eNB could then broadcast access class barring for user equipment belonging to PLMN A, or perform other access stratum -based overload control procedures for users belonging to this specific PLMN. For example, it could reject RRC connection with a wait timer or eWaitTimer for user equipment requesting to connect to this MME. The user equipment will need to read the barring information for its HPLMN/EHPLMN, and act accordingly. The call flows of FIG. **6** illustrate a procedure within the MME upon severe overload indication from the HSS. FIG. **7** indicates a procedure within the eNB triggered by the overload indication for PLMN A.

[0031] In summary, when the HSS provides a moderate overload indication, the serving PLMN and IMS will start to lower the interaction to the HSS, in order to allow the HSS to recover. The UE is still able to have some limited services, which will prevent the UE to keep retrying to connect; this avoids unnecessary repeating messages to the HSS.

[0032] When the HSS provides a severe overload indication, the serving PLMN will start to block access from the user equipment associated with the overloaded HSS/PLMN. This allows the HSS to recover as soon as possible. If the HSS cannot recover, the UE will not get normal services.

[0033] FIG. **8** illustrates a system according to certain embodiments of the invention. In one embodiment, a system may include two devices, such as, for example, HSS **710** and MME **720**. Each of these devices may include at least one processor, respectively indicated as **714** and **724**. At least one memory is provided in each device, and indicated as **715** and **725**, respectively. The memory may include computer program instructions or computer code contained therein. Transceivers **716** and **726** are provided, and each device may also include an antenna, respectively illustrated as **717** and **727**. Other configurations of these devices, for example, may be provided. For example, MME **720** and HSS **710** may be configured for wired communication, rather than wireless communication, and in such a case antennas **717** and **727** would illustrate any form of communication hardware, without requiring a conventional antenna.

[0034] Transceivers **716** and **726** can each, independently, be a transmitter, a receiver, or both a transmitter and a receiver, or a unit or device that is configured both for transmission and reception.

[0035] Processors **714** and **724** can be embodied by any computational or data processing device, such as a central processing unit (CPU), application specific integrated circuit (ASIC), or comparable device. The processors can be implemented as a single controller, or a plurality of controllers or processors.

[0036] Memories **715** and **725** can independently be any suitable storage device, such as a non-transitory computer-readable medium. A hard disk drive (HDD), random access memory (RAM), flash memory, or other suitable memory can be used. The memories can be combined on a single integrated circuit as the processor, or may be separate therefrom. Furthermore, the computer program instructions stored in the memory and which may be processed by the processors can be any suitable form of computer program code, for example, a compiled or interpreted computer program written in any suitable programming language.

[0037] The memory and the computer program instructions can be configured, with the processor for the particular device, to cause a hardware apparatus such as HSS **710** or MME **720**, to perform any of the processes described above. Therefore, in certain embodiments, a non-transitory computer-readable medium can be encoded with computer instructions that, when executed in hardware, perform a process such as one of the processes described herein. Alternatively, certain embodiments of the invention can be performed entirely in hardware.

[0038] Furthermore, although FIG. **8** illustrates a system including an MME and an HSS, embodiments of the invention may be applicable to other configurations, and configurations involving additional elements, as illustrated herein.

[0039] One having ordinary skill in art would readily understand that the invention as described above may be practiced with steps in a different order, and/or with hardware elements in configurations which are different than those which are disclosed. Therefore, although the invention has been described based upon these preferred embodiments, it would be apparent to those of skill in the art that certain modifications, variations, and alternative constructions would be apparent, while remaining within the spirit and scope of the invention. In order to determine the metes and bounds of the invention, therefore, reference should be made to the appended claims.

1. A method, comprising:

transmitting communications traffic to a home subscriber server;

receiving an overload indicator from the home subscriber server, said overload indicator including a severity indicator;

adjusting traffic volume transmitted to the home subscriber server based upon the severity indicator.

2. The method according to claim **1**, wherein the overload indicator is received by a network management entity.

3. A method according to claim **1**, wherein the adjusting traffic volume comprises admitting user equipment to a network with default services, until a message is received indicating that an overload condition no longer exists.

4. The method according to claim **1**, wherein the adjusting traffic volume comprises ignoring certain messages which require action by the home subscriber server.

5. The method according to claim **1**, wherein the adjusting traffic volume comprises admitting users through access points which do not require interaction with the home subscriber server which has sent the overload indicator.

6. The method according to claim **1**, further comprising receiving a NO MORE OVERLOAD signal from the home subscriber server.